

IN THE CLAIMS:

Please amend the claims as indicated below.

Claims 1-29 (withdrawn).

1 30. (original) A method of fabricating a composite electrolyte for use in an
2 electrochemical fuel cell, comprising:
3 (i) applying onto a surface of a substrate a viscous liquid composition of (a)
4 an inorganic cation exchange material, (b) silica-based material, (c) a
5 polymer-based material, and (d) a solvent-dispersant;
6 (ii) spreading the viscous liquid composition to form a uniform thickness layer
7 on the substrate; and
8 (iii) allowing the solvent to evaporate from the viscous liquid composition to
9 yield the composite electrolyte,
10 wherein the inorganic cation exchange material comprises about 0.1 wt%
11 to about 99 wt% of the composite electrolyte.

1 31. (original) The method of claim 30, wherein the silica-based material comprises
2 about 0.1 wt% to about 70 wt%, and the polymer-based material comprises about 0.1
3 wt% to 99.9 wt% of the composite electrolyte.

1 32. (original) The method of claim 30 wherein step (ii) includes drawing the viscous
2 liquid composition through a doctor blade assembly.

1 33. (original) The method of claim 30 wherein step (iii) includes heating the viscous
2 liquid composition.

1 34. (original) The method of claim 30 wherein the inorganic cation exchange material
2 comprises about 0.1 wt% to about 30 wt%, the silica-based material comprises about 0.1
3 wt% to about 15 wt%, and the polymer-based material comprises about 40 wt% to 99
4 wt% of the composite electrolyte.

1 35. (currently amended) The method of claim [19] 30 wherein the inorganic cation
2 exchange material is selected from the group consisting of clay, zeolite, hydrous oxide,
3 inorganic and salt.

1 36. (original) The method of claim 35 wherein the clay includes an aluminosilicate-
2 based exchange material selected from the group consisting of montmorillonite, kaolinite,
3 vermiculite, smectite, hectorite, mica, bentonite, nontronite, beidellite, volkonskoite,
4 saponite, magadite, kenyaite, zeolite, alumina, and rutile.

1 37. (original) The method of claim 35, wherein the clay is modified to make it more
2 compatible with organic matrices, a clay modification including exfoliation which helps
3 to separate platelets of inorganic substance.

1 38. (original) The method of claim 35, wherein the clay includes a modified
2 montmorillonite consisting of montmorillonite treated with a modifier material selected
3 from a group consisting of aminododecanoic acid, trimethyl stearate ammonium,
4 octadecylamine, and methyl dihydroxy hydrogenated tallow ammonium.

1 39. (original) The method of claim 30 wherein the polymer-based material has a
2 linear, branched, or netted morphology.

1 40. (original) The method of claim 30 wherein the polymer-based material includes
2 one of acrylonitrile/butadiene/styrene rubber (ABS), styrene butadiene/acrylate/acetate
3 polymer blends, epoxides, polypropylene, polycarbonate, polystyrene, polyethylene,
4 polyaryl ethers, and polysulfones.

1 41. (original) The method of claim 30 wherein the solvent-dispersant comprises
2 water, N-methyl pyrrolidinone, dimethyl sulfoxide, dimethyl acidimide, and

3 dimethylformamide.

1 42. (original) The method of claim 30 wherein the inorganic cation exchange
2 material, the silica-based material and the polymer-based material comprise 90 wt % or
3 more of the solids content of the composite electrolyte.

1 43. (original) The method of claim 30 wherein the composite electrolyte when
2 measured in the substantially dried state consists essentially of the inorganic cation
3 exchange material, the silica-based material and the polymer-based material.

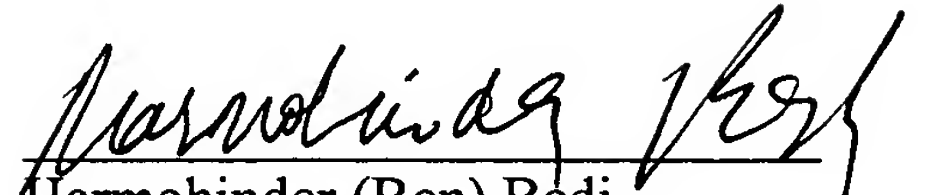
1 44. (currently amended) The method of claim [19] 30 wherein the composite
2 electrolyte has a proton conductivity of about 0.05 S/cm or higher.

Claims 45-50 (withdrawn).

Respectfully submitted,

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